REMARKS

In the Office Action, claims 1-31 were rejected. By this Reply and Amendment, claims 1, 9-11 and 18 have been amended; claims 8 and 19 have been cancelled without prejudice; and claims 1-7, 9-18 and 20-31 remain pending in the present application. The claim amendments are fully supported in the written description and figures of the specification. No new matter has been added.

In the Office Action, claims 1, 6-10, 18, 19 and 21-25 were rejected under 35 USC 102(b) as anticipated by the Crawley et al. reference, US Patent No.: 6,442,304. This rejection is respectfully traversed, however independent claims 1 and 18 have been amended as set forth above. The rejection under 35 USC 102(b) should be withdrawn.

The Crawley et al. reference discloses an optical device having a transducer 41 that can be an optical fiber sensor 31. Additionally, the transducer 41 can be connected with a cable 44. The transducer 41 is surrounded by first container 40 and second container 42 which contain fluids. (See column 10, lines and 43-54). However, the Crawley et al. reference provides no description or teaching related to an optical fiber distributed temperature system that monitors temperature in a body in combination with a control unit that automatically controls parameters in the body depending on the temperature profile.

By way of one specific example, the Crawley et al. fails to disclose or suggest a distributed temperature system "comprising an optical fiber positioned in the conduit" combined with a control unit that "automatically controls parameters in the body depending on the temperature profile to ensure that the process is within an acceptable range" as recited in amended, independent claim 1. In a further example, the Crawley et al. reference fails to disclose or suggest monitoring temperature in a body by use of a "distributed temperature system including an optical fiber that is located within the conduit" combined with "automatically controlling parameters in the body depending on the temperature profile obtained by the

distributed temperature system" as recited in amended, independent claim 18. Accordingly, the rejection under 35 USC 102(b) should be withdrawn.

Claims 6-7, 9-10 and 21-25 ultimately depend from one of the independent claims discussed above and recite additional elements. Accordingly, the rejection also should be withdrawn with respect to these dependent claims.

In the Office Action, claims 1-3, 5, 8-11, 18-20 and 23-25 were rejected under 35 USC 102(b) as anticipated by the Hartog et al. reference, US Patent No.: 5,821,861. This rejection is respectfully traversed, however independent claims 1 and 18 have been amended as set forth above. The rejection under 35 USC 102(b) should be withdrawn.

The Hartog et al. reference discloses a system for monitoring shell temperatures in a reactor. The system comprises a bundle of optical fibers 20 that are located in a tubular metal sheath 24 position on the outside of a shell 16. The optical fibers 20 are connected to processing equipment 28 by a fiber optic field junction box 22. (See column 2, lines and 46-52). However, the processing equipment 28 is described as a control system for the optical fibers. For example, the processing means 28 comprises a laser source (See column 3, lines 1-3) used in providing the spatial resolution of the system and is described as a "reflectometry processing means 28" (See column 5, lines 23-25). Accordingly, the Hartog et al. reference provides no description or teaching related to an optical fiber distributed temperature system that monitors temperature in a body in combination with a control unit that automatically controls parameters in the body depending on the temperature profile.

By way of one specific example, the Hartog et al. fails to disclose or suggest a distributed temperature system "comprising an optical fiber positioned in the conduit" combined with a control unit that "automatically controls parameters in the body depending on the temperature profile to ensure that the process is within an acceptable range" as recited in amended, independent claim 1. In an additional example, the Hartog et al. reference fails to disclose or suggest monitoring temperature in a body by use of a "distributed temperature system including an optical fiber that is located within the conduit" combined with "automatically controlling

parameters in the body depending on the temperature profile obtained by the distributed temperature system" as recited in amended, independent claim 18. Accordingly, the rejection under 35 USC 102(b) should be withdrawn.

Claims 2-3, 5, 9-11, 20 and 23-25 ultimately depend from one of the independent claims discussed above and recite additional elements. Accordingly, the rejection also should be withdrawn with respect to these dependent claims.

Claims 3-4 were rejected under 35 USC 103(a) as unpatentable over the Hartog et al. reference. This rejection is respectfully traversed because the elements recited in the subject dependent claims are not merely a matter of obvious design choice as described in the Office Action. Additionally, claims 3-4 ultimately depend from independent claim 1 and recite additional elements. As discussed above with respect to the independent claims, the Hartog et al. reference fails to disclose or suggest elements of the independent claims or their dependent claims. Accordingly, the rejection should be withdrawn.

Claims 12-17 and 26-31 were rejected under 35 USC 103(a) as unpatentable over the Crawley et al. reference in view of the Anderson et al. reference, US Patent No.: 4,703,174, and the Mercer reference, US Patent No.: 2,499,105. This rejection is respectfully traversed. Claims 12-17 and 26-31 depend from independent claims 1 and 18, respectively, and recite additional elements. As discussed above with respect to the independent claims, the Crawley et al. reference fails to disclose or suggest elements of the independent claims or their dependent claims. The Anderson et al. and Mercer references provide no additional disclosure that would obviate the deficiencies of the Crawley et al. reference. Accordingly, the rejection should be withdrawn.

Additionally, the Anderson et al. reference is relied on for the proposition that: "a fiber optic sensor for sensing pressure and temperature could be used along with a distillation vessel." (See Office Action, page 4). However, the Anderson et al. reference instead teaches a temperature sensor 100 having a housing 102, a carrier 104, and temperature sensitive members 106. The temperature sensitive members 106 each comprises a pair of bimetallic strips that react

changes in temperature. (See column 7, lines 29-61). An optical fiber 16 is used as a communication line for carrying a light signal. When exposed to heat, the bimetallic strips bow and cause carrier 104 to move away from optical fiber 16. As a result less light is reflected back into the optical fiber from a reflective surface 112. (See column 8, lines 3-16).

Accordingly, the Anderson et al. reference fails to teach the fiber optic sensor and distillation vessel for which it is cited. In fact, the Anderson et al. reference teaches away from this approach by utilizing a conventional bimetallic sensor to detect temperature changes. Consequently, the cited references fail to disclose, teach or suggest the elements of the subject claims and no prima facie case of obviousness can be established. The rejection under 35 USC 103(a) should be withdrawn.

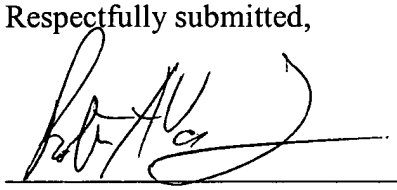
Claims 12-17 and 26-31 were rejected under 35 USC 103(a) as unpatentable over the Crawley et al. reference in view of the Anderson et al. reference and the Gamson reference, US Patent No.: 3,440,865. This rejection is respectfully traversed. Claims 12-17 and 26-31 depend from independent claims 1 and 18, respectively, and recite additional elements. As discussed above with respect to the independent claims, the Crawley et al. reference fails to disclose or suggest elements of the independent claims or their dependent claims. The Anderson et al. and Gamson references provide no additional disclosure that would obviate the deficiencies of the Crawley et al. reference. Accordingly, the rejection should be withdrawn.

Furthermore, the Anderson et al. reference is again relied on for the proposition that "a fiber optic sensor for sensing pressure and temperature could be used along with a distillation vessel." (See Office Action, page 5). As described above, the Anderson et al. reference instead teaches a temperature sensor 100 having a housing 102, a carrier 104, and temperature sensitive members 106. Each temperature sensitive member 106 comprises a pair of bimetallic strips that react to changes in temperature. (See column 7, lines 29-61). An optical fiber 16 is used as a communication line for carrying a light signal. When exposed to heat, the bimetallic strips bow and cause carrier 104 to move away from optical fiber 16. As a result less light is reflected back into the optical fiber from a reflective surface 112. (See column 8, lines 3-16).

The Anderson et al. reference again fails to teach the fiber optic sensor and distillation vessel for which it is cited and teaches away from this approach by utilizing a conventional bimetallic sensor to detect temperature changes. Consequently, the cited references fail to disclose, teach or suggest elements of the subject claims and no prima facie case of obviousness can be established. Accordingly, the rejection under 35 USC 103(a) should be withdrawn.

In view of the foregoing remarks, all pending claims are believed to be in condition for allowance. However, if the Examiner believes certain amendments are necessary to clarify the present claims or if the Examiner wishes to resolve other issues by way of a telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,



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